LE "LOUIE" CAI

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EDUCATION

University of California, San Diego, Data Science B.S.   **Sept 2020 – June 2024**

- **GPA**: 3.7
- **Relevent Coursework**: Machine Learning, Deep Learning, NLP, Data Analysis, Computer Organization and Systems Programming, Data Structures & Object-Oriented Design, Differential Equations, Linear Algebra, Probability and Statistics, Discrete Mathematics

SKILLS

- **Programming Languages**: Python, R, SQL, Java, C, C++, C#, ARM Assembly, Bash, HTML, CSS
- **Machine Learning/Big Data**: Pandas, Machine Learning, Deep Learning, NumPy, matplotlib, scikit-learn, PyTorch, BeautifulSoup4, Request, Selenium, Plotly, FastAPI
- **Development Tools**: Unity, Blender, Gradle, Makefile, Vim, Linux/Debian

EDUCATION

Convolutional Neural Network Image Classification (Report)   **Feb 2022**

- Developed a custom convolutional neural network with PyTorch to classify 20 categories of food images
- Constructed and trained the neural net with PyTorch and cuda; optimized the network through changing the architecture and the hyperparameters
- Graphed and analyzed the feature maps and the filters with matplotlib

Twitter Sentiment Analysis API   **July 2022**

- Developed a configurable LSTM model to classify the sentiment of Twitter tweets into different categories and created an API that returns a response JSON object of the sentiment result with FastAPI
- Trained 1000 different LSTM models with grid search to find the optimal hyperparameters

Minecraft Mod Development   **June 2020 – Dec 2020**

- Over 2.3M downloads on CurseForge
- Developed a plugin that improves/expands the player experience by adding items to interact with in Minecraft
- **Technical Skills**: coded in Java under the Minecraft Forge framework and compiled with Gradle.

Tiktok Reddit Video Automator   **Aug 2022 - Now**

- Created a Python script that downloads hottest videos from subreddits with the Reddit API and uploads them to tiktok accounts with Python and Selenium
- Can be deployed to a server and post videos automatically with configurable settings (rest interval, target subreddit, etc.)

iOS Mobile Hockey Game   **July 2021 – Today**

- Developed a touch-based air hockey game with C# under the Unity game engine with a functional alpha version with a proper game mechanism, scoring system, UI animations, and an AI trained through reinforcement learning with Unity's ML-Agents library
- **Technical Skills**: uses C# scripts to create custom behaviors and trigger events. Used Blender to model the puck, bat, and table. Uses Photoshop to adjust the UI sprites.

EXPERIENCE

Member of National Honors Society   **Sept 2019 - June 2020**

- Responsible for tutoring lower class students with mathand sciences. Improving their general understanding of the subject matter.

President of the Programming Club   **Sept 2019 - May 2020**

- Responsible for creating presentations and live demonstrations of Java code and presenting them to the club members